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RECORD OF REVIEW OF OER PUBLICATIONS FOR SECURITY/SANITIZATION APPROVAL

SUBJECT *PRC Expenditures for Uranium Enrichment*  
*RP 74-9 (Project 12,6850)*

BRANCH

*U/RE*

EXTENSION

*1370*

SECURITY REVIEW

SANITIZING INSTRUCTIONS

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*This RP will be published with a classification of TOP SECRET RUFF/NO FOREIGN DISSEM and will not be released to any foreign governments.*

*mfg  
4 Apr 1974*

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INFORMATION REPORT CLEARANCE REQUEST					DATE RECEIVED					
PRIORITY		<input checked="" type="checkbox"/> ROUTINE			4 April 1974					
NAME OF REQUESTER				OFFICE			EXTENSION			
				OER/St/P/C			1110			
REPORT NO.		FIELD REPORT NO.		CLASS. AND CONTROL		PORTION DESIRED				
1.					S/NFD/CD		Information underlined in red on the attached two pages.			
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<p>PROPOSED USE Attached are two pages from a draft copy of OER Project 12.6850, "PRC Expenditures for Uranium Enrichment" which we would like to publish as a Research Paper. May we use this information as presented in the attached? If so, must we carry over the controls, or may we publish our RP with a classification of TKH/NO FOREIGN DISSEM?</p>										
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<p>REMARKS Please call when you have a response ready, and we will pick up the attached pages.</p>										
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Annual capital investment was largest during the early 1960s and during 1967-72. In each of these periods, annual investment exceeded \$20 million. Peak investment occurred in 1967 when capital spending totaled \$40 million, all at Chin-kou-ho. Investment during 1971-72 has been running at about \$20 million per year.

The estimated operating expenditures at Lan-chou imply enrichment costs of \$250 to \$500 per SWU exclusive of capital charges -- significantly higher than costs elsewhere in the world, which generally range from from \$30 to \$50 per SWU, including capital charges. Such costs are probably too high to permit the use of domestically produced enriched uranium outside the Chinese nuclear weapons program, even if sufficient quantities were available. Enriched uranium fuel for future nuclear powerplants probably will be purchased abroad.

is currently believed to have an annual capacity in the range of 30-60 metric tons SWU (mSWU).

Operating expenditures at the Lan-chou gaseous diffusion plant are estimated at \$11-1 million during the period 1963-72. After the completion of start-up and testing, annual operating costs were about \$15 million. This amount includes the costs of maintenance, conversion of uranium ore concentrates to uranium hexafluoride (the feed material for the enrichment cascade), personnel, and electricity. It does not include the cost of the uranium itself. The cost of uranium production (exploration, mining, and concentrating), and of capital investment in related facilities, was excluded. No allowance for amortization, which could be about \$10 million per year, was made in the calculation of operating costs because investment costs have been estimated separately.

The estimated operating expenditures at Lan-chou imply enrichment costs in the range of \$250-\$500 per SWU, considerably higher than costs elsewhere, which generally range from \$30 to \$50 per SWU including capital charges. The PRC has indicated that any enriched uranium for a domestic nuclear electric power program would be imported because of current shortages of this material.<sup>4/</sup> In addition, the relatively high cost of Chinese enriched uranium probably would preclude its civilian use. The PRC may feel, as did France, that large commitments of economic resources can be justified only for an independent nuclear weapons program.